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SunLab/CSP Program Trough R&D

- Current
  - Industry Assistance
  - Bechtel “Low Impact” ISCCS Study
  - USA Trough Initiative
- Future Directions

Industry Assistance

- Sunray Energy HCE Development
  - Low-cost HCE
  - Split Glass Envelope
- Advanced Selective Coating
- Honeycomb Mirror Panel

Bechtel "Low Impact" ISCCS

- Original ISCCS Concept
  - Doubles steam turbine size
  - Reduces cost for power plant equipment
  - Output increased when solar available
  - Potential impact on gas mode efficiencies
  - Solar fraction for baseloaded plant ~10%
- Bechtel "Low-Impact" ISCCS
  - No increase in steam turbine size
  - Further reduces power plant equipment cost
  - Solar used to augment CC output during hot weather
  - Potentially increased solar to electric conversion efficiency
  - Solar fraction for baseloaded plant ~2%

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USA Trough Initiative

Objective:

- Advance the state-of-the-art of parabolic trough technology for near-term competitiveness
- Increase U.S. scope and supply

Approach:

- Competitive RFP
- Minimum of 10% cost share
- Multiple Awards

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USA Trough

- Reflective Energies
  - Solar Trough Organic Rankine Electricity Systems (STORES)
- Bechtel/Pilkington
  - "High Impact" ISCCS Analysis
  - Thermal Storage Options for ISCCS
- Duke Solar
  - Trough Concentrator Development
- MWE & Associates
  - HCE/Mirror Reliability Assessment
- IST/York
  - SEECOT Analysis

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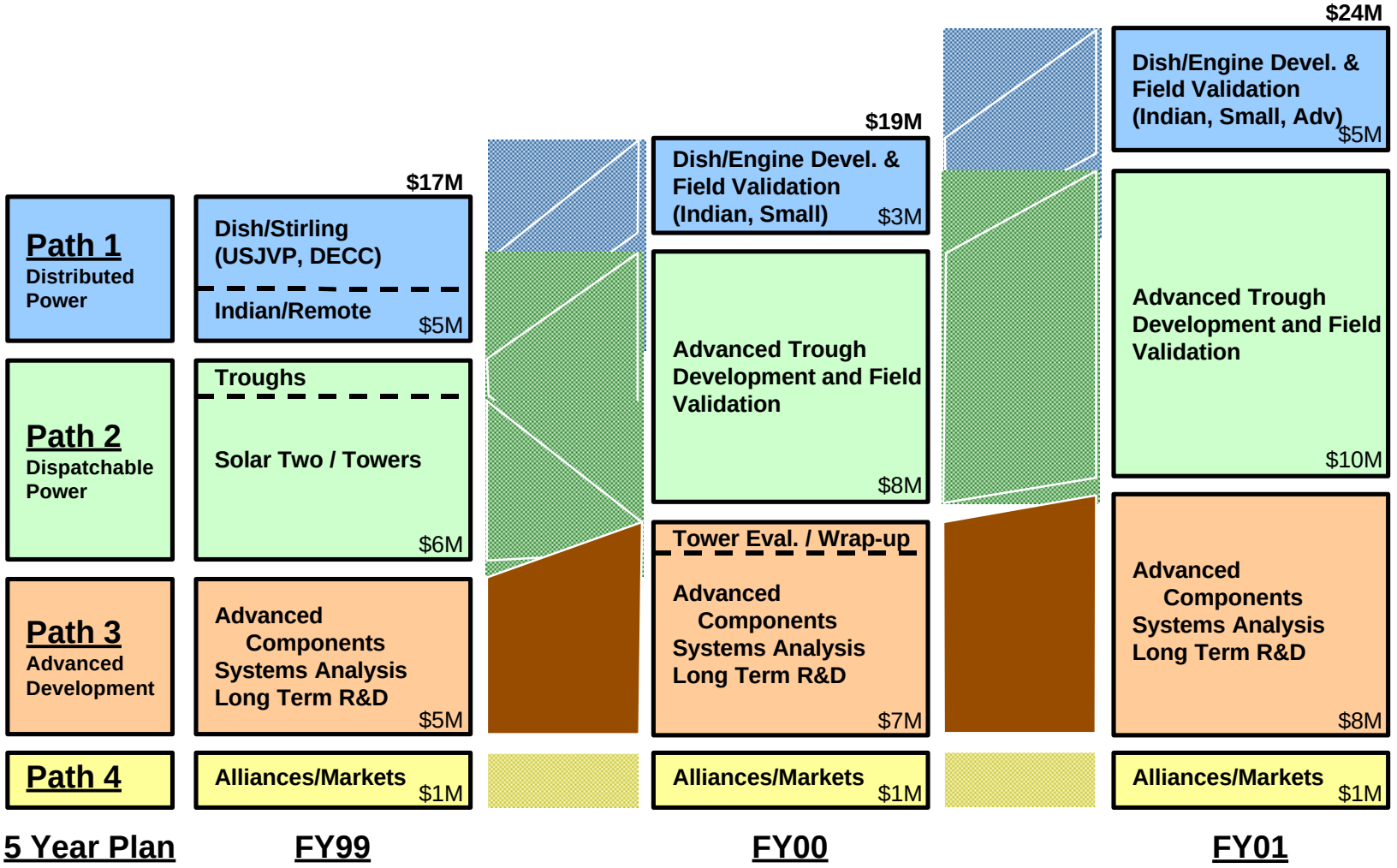
Concentrating Solar Power:
Program Directions



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New SunLab Trough Program Directions

- Utilizing “trough roadmap” to define directions
- Focus on activities to help technology be a success
  - Build on success of existing technology
- Build U.S. Constituents
- New Approaches to Work with industry
  - Workshops/Roadmaps
  - Improved business practices
  - Advisory Panel
  - Core Capabilities

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SunLab Trough Focus

- Highest Priority R&D
  - HCE Reliability & Lifetime
  - Thermal Storage for Troughs
  - Concentrator Improvements & Cost Reduction
  - Improved Plant Designs (ISCCS/Other)
  - O&M Cost Reduction
- Market & Project Development Issues
  - Resource Assessment
  - Modeling & Analysis Capabilities